



CFP2000 Result

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Advanced Micro Devices

Tyan Thunder K8QS Pro, (S4882), AMD Opteron (TM) 850

SPECfp_rate2000 = 78.7

SPECfp_rate_base2000 = 70.6

SPEC license #: 49 | Tested by: AMD, Austin, TX | Test date: Oct-2004 | Hardware Avail: Jul-2004 | Software Avail: Aug-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	97.8	75.9	4	82.3	90.2
171.swim	4	125	115	4	126	114
172.mgrid	4	119	70.0	4	107	78.2
173.applu	4	141	69.2	4	117	83.6
177.mesa	4	97.3	66.8	4	70.7	91.8
178.galgel	4	109	123	4	99.3	135
179.art	4	165	73.0	4	123	98.2
183.equake	4	101	59.4	4	101	59.4
187.facerec	4	110	80.0	4	103	85.8
188.amp	4	164	62.1	4	156	65.3
189.lucas	4	137	68.0	4	114	81.5
191.fma3d	4	153	63.5	4	148	65.8
200.sixtrack	4	154	33.2	4	154	33.2
301.apsi	4	168	71.6	4	167	72.1

Hardware

CPU: AMD Opteron (TM) 850
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip
 CPU(s) orderable: 1-4
 Parallel: No
 Primary Cache: 64KBI + 64KBD on chip
 Secondary Cache: 1024KB(I+D) on chip
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 16x512 MB PC3200 CL3.0 ECC Reg
 Disk Subsystem: SCSI, Seagate Cheetah ST336753LW, U320, 15K rpm
 Other Hardware: None

Software

Operating System: SuSE Linux Enterprise Server for AMD64 (SP3)
 Compiler: PathScale EKO Compiler Suite, Release 1.3
 File System: Linux/ext3
 System State: Multi-user SuSE Run level 3

Notes/Tuning Information

```
+FDO: PASS1= -fb_create fbdata PASS2= -fb_opt fbdata
+ACML is linking with AMD Core Math Library
```

Baseline optimization

```
C programs: -Ofast -WOPT:mem_opnds=on +FDO
Fortran programs: -Ofast -LNO:fusion=2
Portability Flags:
178.galgel: -fixedform
```

Peak Tuning:

```
168.wupwise: -Ofast -LNO:prefetch Ahead=5:prefetch=3
             -OPT:unroll_times_max=8:unroll_size=128:IEEE_NaN_Inf=off:ro=3 -TENV:X=4
             -IPA:space=1000:linear=on:plimit=50000:callee_limit=5000
             -INLINE:aggressive=on
171.swim: -Ofast -LNO:fusion=2:prefetch=2
```



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Notes/Tuning Information (Continued)

```

172.mgrid:  -O3 -LNO:fusion=2:blocking=off:prefetch=2
            -OPT:Ofast:unroll_times_max=8:unroll_size=256:ro=3
            -CG:gcm=off:cflow=off
173.applu:  -Ofast -CG:local_fwd_sched=on
            -LNO:fusion=2:fission=2:full_unroll_size=10000:prefetch=3
            -OPT:ro=3 -TENV:X=3 -WOPT:val=2
177.mesa:   -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +FDO
178.galgel: -Ofast -OPT:fast_complex -CG:load_exe=0:use_movlpd=on +ACML
179.art:    -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32 +FDO
183.quake: basepeak = true
187.facerec: -Ofast -OPT:treeheight=on:IEEE_NaN_Inf=off:ro=3 -CG:load_exe=0
            -LNO:fusion=2:prefetch=0 +FDO -IPA:plimit=1800
188.ammp:  -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3 -LNO:prefetch=0
            -fno-math-errno -TENV:X=4 +FDO
189.lucas: -Ofast -CG:prefetch=off:load_exe=2:local_fwd_sched
            -TENV:X=4 -WOPT:retype_expr=on +FDO
191.fma3d: -O2 -ipa -WOPT:mem_opnds=on:retype_expr=on -OPT:Ofast:IEEE_arith=3:ro=3
            +FDO -IPA:pu_reorder=1
200.sixtrack:= -Ofast +FDO
301.apsi:  -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0
BIOS rev. 1.00

```

Taskset utility used to bind CPU(s) to processes

All memory slots populated on all CPU(s)

The tested system can be assembled using an SSI MEB footprint case, such as the CCSI RC0352 3U rackmount case, and a Tyan recommended 660W EPS-12V power supply, such as the Enermax 660W power supply (PEG851AX-VH)